**Mike Gearheard/R10/USEPA/US**
09/01/2007 04:36 PM

To Richard Parkin/R10/USEPA/US@EPA
cc Adrianne Allen/R10/USEPA/US@EPA, Ben Cope/R10/USEPA/US@EPA, Croxton.David@epamail.epa.gov,
bcc
Subject Re: Next Steps -- Columbia Temperature TMDL

Thank you, Rick. Excellent comments. We need to continue the education process on the importance of temperature, even fine temperature gradations. I will figure out a way to incorporate that point and probably resort to suggesting further discussion on the science. It will be critically importance for us to demonstrate our place on the scientific high ground. On your second point, I will modify my memo to make clear that our (regulated) federal partners don't hold a veto on this matter. I was consciously treading close to that line; but maybe I was not clear enough.

Mike Gearheard
Director, Office of Water and Watersheds
phone: (206) 553-7151
fax: (206) 553-0165
email: gearheard.mike@epa.gov
Richard Parkin/R10/USEPA/US

**Richard Parkin/R10/USEPA/US**
08/29/2007 03:23 PM

To Mike Gearheard/R10/USEPA/US@EPA
cc Adrianne Allen/R10/USEPA/US@EPA, Ben Cope/R10/USEPA/US@EPA, Croxton.David@epamail.epa.gov, Jennings.Jannine@epamail.epa.gov, keenan.dru@epa.gov, psyk.christine@epa.gov, soscia.marylou@epa.gov, Michelle Pirzadeh/R10/USEPA/US@EPA
Subject Re: Next Steps -- Columbia Temperature TMDL

Mike, Very good. I am impressed that you turned this out so fast. I have to comments/suggestions.

1. I think the message should briefly address the impact of warm temperature on salmon. Elin has been hearing that the benefits of small improvements in temperature would be negligible and in fact we would impede the recovery process by jeopardizing the current biop process. I think small improvements are important. Temperature is a super-factor (to paraphase you) in salmon biology because it affects all life stages of these fish and has many indirect affects. It directly affects spawning, rearing, feeding, metabolic processes including growth, and overall survivability. Further, the incidence and intensity of some diseases are directly related to increased water temperatures. Indirect effects of increased water temperature include changing food availability, increasing competition for feeding and rearing habitat, and enhancing the habitat for predatory fishes. The Table below shows that small changes in temperature have a meaningful affect on salmon. For many effects the documented difference between temperature causing initial concern and that causing serious concern is 2 degrees. Initial concern is the level that may cause an effect. Serious concern is the level that very likely causes an effect.

**Table 4.6**: Summary of the effects of increased water temperature on the important fish species

of the Columbia River basin.

| | |
|---|---|

| Effect/Concern - Salmonids | Water Temperature (C ) | |
|---|---|---|
| | Initial Concern | Serious Concern |
| Increased mortality to eggs incubating in the gravel1 | 14 | - |
| Abnormal egg/larval development resulting from the exposure of adults to high temperatures1 | 15 | 17 |
| Impaired juvenile pre-smolt physiology, excluding growth | | |
| - Chinook salmon | >14 | - |
| - Sockeye salmon | >15 | - |
| - Coho salmon | >14 | - |
| - Steelhead trout | >14 | - |
| Impaired adult bull trout physiology | >12 | - |
| Impaired smoltification, slows or halts outmigration | | |
| - Chinook salmon | 13 | 15 |
| - Sockeye salmon | 13 | 15 |
| - Coho salmon | 14 | 17 |
| - Steelhead trout | 12 | 14 |
| - Bull trout | - | - |
| Reduced growth by juveniles1 | 18 | 21 |
| Reduced growth by subadult and adult bull trout | 16 | 18 |
| Reduced juvenile distribution | | |
| - Chinook salmon | 17 - 18 | 20 - 22 |
| - Sockeye salmon | - | - |
| - Coho salmon | 15 | 18 |
| - Steelhead trout | - | 20 - 22 |
| Reduced distribution of subadult and adult bull trout | 13 - 14 | 16 - 18 |
| Increased disease | 15 - 16 | 18 - 20 |
| Adult migration stopped1 | - | 21 |
| Adult bull trout migration and holding impaired | 16 | - |
| **Effect/Concern - Non-Salmonids** | **Initial Concern** | **Serious Concern** |
| | | |

| | | |
|---|---|---|
| White sturgeon fail to reproduce or have an unsuccessful 3 - week incubation | >17 | >18 |

2. My second comment is that the discussion under current plan seems to say that if we do not reach agreement with the Corps and Bureau on certain policy issues we will not move forward. Here are the guilty excerpts taken out of context :

"The purpose of our September 25-26 meeting in Portland is to begin to explore if we can get past the issues that prevented progress in the past." ....."Assuming we can reach agreement on some of these larger policy issues .....then we would set up a second meeting to involve our technical staff and begin to focus on the modeling and other technical issues. Only once we can see our way clear of these policy and technical concerns would we set about trying to move forward to update the previous draft TMDL."

Once we decide to re-start the process we should be resolved to carry on with or without the Corps and Bureau concurrence on these issues. They are the regulated community. We are the experts and the authorities on TMDLs. The meeting with them should be to try to get on the same page with them and to listen to any new information that may convince us to change our course of action, but not to get their permission to move forward (forgive me, that is a little strong). In developing the original TMDL we met many times with members of the regulated community and made many changes to our course of action in response to information and suggestions from them. That includes the Corps and Bureau.

If the climate is not conducive to our moving forward and making policy decisions contrary to the desires of the Corps and Bureau, then perhaps we should not move forward now because we will be unable to develop an adequate TMDL.

Rick Parkin
U.S. EPA, Region 10
(206) 553-8574
Mike Gearheard/R10/USEPA/US

**Mike Gearheard/R10/USEPA/US**
08/29/2007 01:13 PM

To Richard Parkin/R10/USEPA/US@EPA, Croxton.David@epamail.epa.gov, soscia.marylou@epa.gov, Ben Cope/R10/USEPA/US@EPA, Jennings.Jannine@epamail.epa.gov, keenan.dru@epa.gov, psyk.christine@epa.gov, Adrianne Allen/R10/USEPA/US@EPA

cc

Subject Next Steps -- Columbia Temperature TMDL

Hi Friends,

Elin asked me for some info on our Columbia TMDL plans so she can try to help our federal family partners feel more comfortable with where we are and where we are going. This is my first short at the briefing memo for her. I'd like you comments and suggestions. Will try to send this to her next week. Check it out.

**********

Hi Elin,

Here is my thinking on where we are with the TMDL.

First some history. EPA's role under the CWA relative to water quality standards is to produce guidance; the states actually do the standard setting, and hopefully they do so consistent with our guidance. For temperature, because the national guidance was not considered to be adequate for our specific Northwest emphasis on salmon, we (EPA, Region 10) prepared our own temperature guidance. As you might imagine, this was a big job for our region. The process of producing the Regional Temperature Guidance took over three years and involved the formation of a federal advisory committee (FACA) along with extensive formal scientific peer review. NOAA/NMFS was a big part of that effort, mostly out of their Portland office.

We adopted our temperature guidance in 2003. Bob Lohn sent a letter endorsing the guidance, but pointing out the potential need for site-specific considerations and raising some concern about temperature and "large federal dams." Here's a link to Bob's letter.

A couple more points about temperature. I tend to think of temperature as a sort of 'super criterion' when it comes to healthy ecosystems. For example, rivers in their natural condition tend to be colder than rivers altered extensively by us. Rivers that meander are generally colder than rivers straightened out (or at least colder at the right times and in the right places). Rivers through the deep natural forests tend to be colder than rivers through clear cuts. Rivers with healthy vegetated river banks tend to be colder than rivers where livestock have trampled the banks or fields are plowed right to the river's edge. You get the idea. Also, our criteria clearly recognize that natural variation exists. Our criteria are not a 'one size fits all' scheme. While the numbers in the criteria do track the best current scientific information regarding needed water temperatures for the different life stages of salmon, the criteria also explicitely allow for natural conditions to trump the numeric criteria. So, if one can show that the Salmon River, for example, naturally exceeds our criteria in the summertime, then that natural condition would become the accepted temperature. Presumably, salmon have adapted over the millenia to conditions in the Salmon River, and our temperature criteria should respect that natural order. Of course, there can be a debate about what is 'natural.'

Oregon and Washington have now adopted temperature standards consistent with our regional temperature guidance. We approved the Oregon standards in 2004 (and are in litigation with environmental groups over that approval), and we are working to approve the Washington standards soon. On the TMDL front, Oregon has moved out with hundreds of TMDLs based on the new T standards, including for the Willamette and Umpqua basins. Washington is a little behind in this regard, partly due to the fact that they don't yet have EPA approved new temperature standards, and it is the standards and resulting listing of impaired waters that drives the TMDL workload.

The other factor that drives the TMDL program, is the history of lawsuits and the state-by-state settlements or consent decrees that resulted. Under those legal arrangements, EPA and our state partners are obligated to prepare large numbers of TMDLs according to specified timeframes. For the most part, we are on target to comply with our legal obligations.

(b) (5) [redacted]

(b) (5) [redacted]

Our current plan is to meet with the Corps of Engineers and the Bureau of Reclamation (the major

operators of federal dams on the Snake and Columbia rivers) and discuss various ways for moving forward with the TMDL work. We have extensive scientific background from our earlier (2000 - 2002) effort. The Corps and the Bureau raised significant technical and policy concerns with that work. The purpose of our September 25-26 meeting in Portland is to begin to explore if we can get past the issues that prevented progress in the past. The Corps has suggested the overall structure for this meeting and subsequent meetings. Specifically, they would like to start at the policy level and focus on the major policy issues that we have struggled with. Assuming we can reach agreement on some of these larger policy issues (e.g., should our TMDL analysis include waters in Canada? could we assume that dams are part of the natural landscape? and so forth), then we would set up a second meeting to involve our technical staff and begin to focus on the modeling and other technical issues. Only once we can see our way clear of these policy and technical concerns would we set about trying to move forward to update the previous draft TMDL.

For this first round of meetings, we are keeping the conversation within the federal family. When (and if) we get started updating the TMDL, we would need to involve our state and tribal partners in the effort. We have not yet discussed exactly how to do that.

It is possible that strident opposition from the Corps and/or the Bureau will continue in spite of our best efforts to reach agreement on the policy and technical concerns. That will be the time for us to regroup and decide on our best course of action.

Mike Gearheard
Director, Office of Water and Watersheds
phone: (206) 553-7151
fax: (206) 553-0165
email: gearheard.mike@epa.gov

**Mike Gearheard/R10/USEPA/US**
08/28/2007 03:38 PM

To Elin Miller/R10/USEPA/US@EPA
cc Christine Psyk/R10/USEPA/US@EPA
bcc David Croxton/R10/USEPA/US
Subject Re: Fw: Conversation on Bio-op

History: This message has been replied to.

Good question. (Don't get me wrong, I think a full airing out of this overall matter is very healthy for us.)

One of the aspects that we have been trying to look at, as we consider jumping back into the temperature TMDL hot water, is if there are ways to redraw the boundaries of our study area. When you consider what can actually be done to affect temperature for the better, there are pretty limited targets of opportunity. IPC's Hells Canyon complex is one of them. So it makes sense to at least consider ways to bring in that reservoir. There might be some legal issues with that, however, considering there is already an approved temperature TMDL for that part of the Snake.

Mike Gearheard
Director, Office of Water and Watersheds
phone: (206) 553-7151
fax: (206) 553-0165
email: gearheard.mike@epa.gov
Elin Miller/R10/USEPA/US

**Elin Miller/R10/USEPA/US**
08/28/2007 01:25 PM

To Mike Gearheard/R10/USEPA/US@EPA
cc Christine Psyk/R10/USEPA/US@EPA
Subject Re: Fw: Conversation on Bio-op

Mike, I also have a really good conversation with Christine and team today on Snake/Hell's Canyon which had increased my enthusiasm for temperature focus -- I really am not a lost cause! Does it make sense to combine our conversations?
Best Regards,

*Elin*

Elin D. Miller
Regional Administrator
Region 10
1200 6th Avenue
Seattle, WA 98101

206-553-1234
Mike Gearheard/R10/USEPA/US

**Mike Gearheard/R10/USEPA/US**
08/28/2007 08:34 AM

To Miller.Elin@epamail.epa.gov
cc

Subject Fw: Conversation on Bio-op

Just fyi. Some intelligence regarding water quality commitments in the latest FCRPS BiOp. (TDG is total dissolved gas.)

We are to meet on this subject (the TMDL) tomorrow morning at 7:30, I think. You, me, Ron, plus I have invited our relatively new TMDL program manager, Dave Croxton, and our old Columbia River TMDL manager, Rick Parkin.

Mike Gearheard
Director, Office of Water and Watersheds
phone: (206) 553-7151
fax: (206) 553-0165
email: gearheard.mike@epa.gov
----- Forwarded by Mike Gearheard/R10/USEPA/US on 08/28/2007 08:29 AM -----

**MaryLou Soscia/R10/USEPA/US**
Sent by: Marylou Soscia

08/23/2007 02:49 PM

To Mike Gearheard/R10/USEPA/US
cc
Subject Conversation on Bio-op

Mike:

I talked to Ritchie Graves (NOAA Branch Chief) today and he said that in the Bio-Op for water quality:

- for TDG, same issues as 2000 Bio-Op - flow deflectors, spill and monitoring

- for temperature, there is not much, except for ongoing operations at Dworshak and a new agreement with the Bureau of Reclamation that might TWEAK the flows from the Upper Snake in the spring (not in the Fall) to help with downstream migrations. [maybe that is what Steve is referring to, but I cannot imagine in my wildest dreams how our TMDL could affect that since the flows were all tied up in the 420caf deal that they negotiated with the ID legislature (Jim Werntz knows about all that)].

That is it.

I have not heard back from the bride's side of the family but I will let you know when I do.....take care.....ml